UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III

133367

In the Matter of:	)
Walsh Landfill Site.	)
Honeybrook and Caernarvon Townships, Pennsylvania	)
Ernest Barkman and Grace Barkman (Respondents)	)
	)
Proceeding under Section 106(a) of the	)
Comprehensive Environmental Response,	)
Compensation and Liability Act of 1980	)
(42 U.S.C. § 9606(a)), and Section 7003(a)	)
of the Resource Conservation and Recovery Act	)
Act (42 U.S.C. § 6973(a))	)

Docket No. III-85-11-DC
(Red)

ORDER

The following Order is issued to Ernest Barkman and Grace Barkman ("Respondents") pursuant to the authority vested in the President of the United States of America by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), 42 U.S.C. § 9606(a), and by Section 7003(a) of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6973(a), as delegated to the Administrator US Environmental Protection Agency ("EPA") and redelegated by the Adminstrator to the Regional Administrator, EPA Region III. Notice of this Order was given to the Commonwealth of Pennsylvania.

The objective of this Order is to protect public health and the environment from an imminent and substantial endangerment which may result from the release or threat of release of hazardous substances from, and the storage and disposal of hazardous wastes at, the Walsh Landfill Site (a.k.a., The Walsh Road Site, the Honeybrook Site, the Barkman Lanifill Site, the Welsh Road Site, and the Welsh Landfill Site). Specific goals of this Order are: (1) to fully determine the extent and the nature of the release or threat of release of hazardous substances and hazardous wastes from the Walsh Landfill Site (2) to develop solutions to mitigate the release or threat of release of hazardous substances and hazardous

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wastes from the Walsh Landfill Site (3) to take actions to mitigate the release or threat of release of hazardous substances and hazardous wastes from the Walsh Landfill Site.

This Order shall apply to and be binding upon the Respondents and their agents, successors, and assigns and upon all persons, contractors, and consultants acting for the Respondents.

FINDINGS OF FACT

1. Respondents are "persons" within the meaning of Section 101(21) of CERCLA, 42 U.S.C. § 9601(21) and Section 1004(15) of RCRA, 42 U.S.C. § 6903(15).

2. Respondents own several contiguous parcels of real property located at the intersection of Pennsylvania Route 10 and Welsh Road in Honeybrook and Caernarvon Townships in Chester and Lancaster Counties, Pennsylvania.

3. The real property owned by the Respondents is described in the following deed books and page numbers:

   Chester County Deed Book X38 page 767
   Chester County Deed Book Z38 page 489
   Chester County Deed Book W40 page 838
   Chester County Deed Book K53 page 26
   Chester County Deed Book A57 page 559
   Lancaster County Deed Book R55 page 1121
   Lancaster County Deed Book L80 page 16

   These properties are hereinafter referred to as the "Walsh Landfill Site".

4. The Walsh Landfill Site is a "facility" within the meaning of Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

5. The Respondents are the owners and, from 1963 to 1977, were the operators of the Walsh Landfill Site within the meaning of Section 101(20)(A) of CERCLA, 42 U.S.C. § 9601(20)(A).

6. The Respondent's are "person[s] ... contributing to ... storage... or disposal" of hazardous wastes within the meaning of Section 7003(a) of RCRA, 42 U.S.C. § 6973(a).

7. From 1963 until 1977, the Walsh Landfill Site was operated by the Respondents as a municipal landfill. The landfill (refuse disposal area) comprises approximately seven acres.

8. The Walsh Landfill Site is surrounded by a small residential and farm community with approximately 100 persons residing within a 1/2 mile radius of the site. Residential dwellings are located directly adjacent to the site as close as 500 feet away.

9. Previous studies by the EPA indicated that the site poses a significant threat to public health and the environment and has resulted in the Walsh Landfill Site's inclusion on the National Priorties List of Superfund Sites, 40 C.F.R. Part 300, App. B.

10. Previous monitoring well sampling and analysis conducted by the Pennsylvania Department of Environmental Resources ("PADER") at the Walsh Landfill Site revealed a number of contaminants in monitoring wells at the site as summarized in Table 1.

Table 1
Partial Summary of Sample Results
PADER Samples of 12/28/82

Monitoring Well Well #	Benzene ug/L	Vinyl Chloride ug/L	1,2 dichloroethane ug/L	1,1 dichloroethane ug/L	Tetrachloro-ethylene ug/L
#13	17	71	ND	58	29
#14	11	31	ND	50	6
#17	possible trace	possible trace	ND	ND	estimated 2

11. On June 12, 1984, the EPA conducted a site inspection/sampling at the Walsh Landfill Site. During this inspection:

a) Twenty-six (26) drums were noted at the site. The twenty-six (26) drums were being stored, within the meaning of Sections 1004(33) and 7003(a) of RCRA, 42 U.S.C. §§ 6903(33) and 6973(a), on an abandoned flatbed trailer located on a frequently used access road. The flatbed trailer did not have any siding to prevent the drums from falling onto the ground. The drums were exposed to weather conditions and were not segregated or adequately labeled. There was nothing to prevent access to the drums.

b) Samples were collected from five drums on the flatbed trailer and from a seep emanating from the eastern perimeter of the landfill. The sample results are summarized in Table 2.

Table 2
Summary of Sample Results
(EPA Samples of 6/12/84)

DRUM	pH	Flash Point °C	Reactivity cyanide mg/kg	Toluene mg/L	Methylene Chloride mg/L	Ethyl Benzene mg/L	1,2 Dichloro Propane mg/L	Chloro Benzene mg/L
Blank	–	–	—	.003	ND	ND	ND	ND
1	3.0	30°	<1	125	ND	ND	ND	ND
2	5.3	27°	<1	60	1000	ND	ND	ND
3	6.0	>60°	3.7	5	ND	32	350	ND
4	10.1	>60°	<1	55	ND	40	ND	ND
5	3.0	>60°	<1	3	ND	16	ND	400
Seep	7.2	>60°	200	1.0	ND	5	ND	ND

12. The contents of the drums referred to in Table 2 are "solid wastes" within the meaning of Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

13. Toluene, methylene chloride, ethyl benzene and chlorobenzene as found in Drums #1, #2, #3, #4 and/or #5 referred to in Table 2 are "hazardous wastes" within the meaning of Sections 1004(5) and 3001 of RCRA, 42, U.S.C. § 6903(5) and 40 C.F.R. § 261.31.

14. Toluene, methylene chloride, ethyl benzene, 1,2 dichloropropane and/or chlorobenzene detected in Drums #1, #2, #3, #4 and/or #5, are "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

15. The substances contained in Drums #1 and #2 exhibit low flashpoints and are ignitable and pose a threat to public health, welfare and the environment via fire and/or explosion.

16. The substances contained in Drum #3 and in the on-site seep exhibit reactive qualities and pose a threat to public health, welfare and the environment via the possible generation of toxic gases (i.e., hydrogen cyanide).

17. Exposure to toluene contained in Drums #1, #2, #3, #4 and #5, and the seep, can cause irritation of the eyes, respiratory tract and skin. Acute exposure to toluene results in central nervous system depression.

18. Contact with methylene chloride contained in Drum #2 may cause dermatitis and skin burns. It is an irritant to the eyes and respiratory tract. Methylene chloride is a mild narcotic and in severe cases of exposure pulmonary edema, coma and death have been observed. Methylene chloride is dangerous when heated to decomposition, emitting highly toxic fumes of phosgene.

19. Contact with the ethyl benzene contained in Drums #3, #4, and #5 and the seep irritate the eyes, nose, throat and skin. Contact may cause dermatitis. Acute exposure to high concentrations may produce irritation of mucous membranes of the upper respiratory tract, nose and mouth, followed by

symptoms of narcosis and death by respiratory center paralysis. Ethyl benzene can present a fire hazard when exposed to heat or flame.

20. Chlorobenzene detected in the seep is an irritant to the skin, conjunctiva and mucous membranes of the upper respiratory tract. Prolonged or repeated contact may cause skin burns. Acute exposure to chlorobenzene may cause drowsiness, loss of coordination and unconsciousness. Chlorobenzene can present a fire hazard when exposed to heat or flame.

21. 1,2 dichloropropane detected in Drum #3 can cause dermatitis. It is regarded as one of the more toxic chlorinated hydrocarbons. Overexposure to 1,2 dichloropropane can cause eye and skin irritation and may cause drowsiness and lightheadedness; prolonged overexposure may affect the liver and kidneys. 1,2 dichloropropane can present a fire hazard when exposed to heat or flame.

22. On June 21, 1984, the EPA collected samples from eight residential drinking water wells in the vicinity of the Walsh Landfill Site. Contamination was detected in samples from six of the eight residential wells sampled. Concentrations of known animal carcinogens that exceed the 10^{-6} cancer risk factor were detected in three residential wells, as noted in Table 3.

Table 3
Partial Summary of Sample Results
EPA Samples of 6/21/84

Residential Wells	Compound	Concentrations Detected in Samples (ug/L)	Concentrations at which the 10^{-6} Risk Factor is triggered (ug/L)
J. Matin	Benzene	4.6	0.68
	1,2 Dichloroethane	1.4	0.6
Christi (Shores)	Benzene	2.5	0.68
	Vinyl chloride	5.2	.015
	Tetrachloroethylene	4.4	0.7
E. Beechy	Tetrachloroethylene	3.5	0.7
	1,1 Dichloroethane	1.2	1.2

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23. The 10^{-6} risk factors are calculated from laboratory animal cancer experiments and represent the concentration of a cancer-producing substance in water that is calculated to produce one additional case of cancer in a population of one million persons each of whom consumes two liters per day of the contaminated water for a period of 70 years.

24. Benzene, 1,2 dichloroethane, 1,1 dichloroethane, tetrachloroethylene and vinyl chloride detected in residential wells as noted in Table 2 are "hazardous wastes" within the meaning of Sections 1004(5) and/or 3001 of RCRA, 42 U.S.C. § 6903(5), and 40 C.F.R. § 261.31.

25. Benzene, 1,2 dichloroethane, 1,1 dichloroethane, tetrachloroethylene and vinyl chloride detected in residential wells as noted in Table 2 are "hazardous substances" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

26. A number of the hazardous substances and hazardous wastes detected in the off-site residential wells had previously been detected in monitoring wells at the Walsh Landfill Site as noted in Table 1 of this Order.

27. On December 6, 1984, EPA conducted a site inspection of the Walsh Landfill Site and noted that the twenty-six (26) drums were still being stored on the flatbed trailer as described in Paragraph 11 of this Order.

28. Due to the low pH, ignitablity and reactivity of various substances contained in the twenty-six (26) drums, one or more of the drums could corrode, or their contents could ignite or explode, resulting in a release of hazardous substances and hazardous wastes into the air and surrounding soils.

29. Due to the exposure of the drums to the weather, the drums could become worn or rusted, resulting in a release of hazardous substances and hazardous wastes into the air and surrounding soils.

30. Due to the accessibility of the drums, and the proximity of the drums to a residential area, there is a potential for vandalism of the drums which could result in a release of hazardous substances and hazardous wastes into the air and surrounding soils.

31. Due to the presence of cyanide-containing substances and acidic substances (i.e., low pH substances), and due to the potential leaking, spilling and or vandalism of drums, acids and cyanide-containing substances may mix, generating and releasing hydrogen cyanide into the air.

32. Hydrogen cyanide is a protoplasmic poison and in sufficient quantities can cause death through asphyxiation. Hydrogen cyanide is a "hazardous substance" within the meaning of Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

33. The hazardous wastes referred to in Paragraph 24 have been or are being disposed of within the meaning of RCRA Section 1004(3), 42 U.S.C. Section § 6093(3).

34. The hazardous substances referred to in Paragraphs 14, 25 and 31 of this Order have been released and/or threaten to be released from the Walsh Landfill Site within the meaning of Sections 101(22) and 106(a) of CERCLA, 42 U.S.C. §§ 9601(22) and 9606(a).

35. Persons who reside or work near the Walsh Landfill Site on which the twenty-six (26) drums are located, persons who use the access road along which the drums are located, and other persons attracted to the drum storage area (i.e., children, vandals) may be exposed to the hazardous substances and hazardous wastes which threaten to be released from those drums. Such exposure may occur via direct contact with hazardous substances and hazardous

wastes that have leaked or spilled from the drums or have been carried off site by vandals. Exposure may also result from inhalation of hydrogen cyanide or other vapors emanating from hazardous substances and hazardous wastes released from the drums via leaks, spills, and/or fire and explosion.

36. The persons described in Paragraph 35 may also be exposed to injury from a fire or explosion caused by the hazardous substances and hazardous wastes in the drums.

37. The persons who use groundwater in the vicinity of the Walsh Landfill Site for consumption and bathing may be exposed to hazardous substances which have been released or threaten to be released from, and hazardous wastes which have been or are being disposed of at, the Walsh Landfill Site.

38. The release and/or threatened release of the hazardous substances from, and the storage and disposal of hazardous wastes at, the Walsh Landfill Site may represent an imminent and substantial danger to public health or welfare and the environment.

39. In order to protect the public health, welfare and the environment, it is necessary that certain actions be taken to mitigate the release and/or threat of release of hazardous substances from and the storage and disposal of hazardous wastes at the Walsh Landfill Site.

40. The mitigative actions outlined in Paragraph 42 of this Order are consistent with Section 300.65 of the National Oil and Hazardous Substances Contingency Plan ("NCP") as described in 40 C.F.R § 300.65.

DETERMINATION

41. Based on the foregoing Findings of Fact, the Regional Administrator, EPA

Region III, has determined that there may be an imminent and substantial endangerment to public health, welfare and the environment due to the actual and/or threatened release of hazardous substances from, and/or the storage and disposal of hazardous wastes at the Walsh Landfill Site which is owned and was previously operated by the Respondents.

ORDER

42. Based on the foregoing Findings and Determinations, and in accordance with Section 106(a) of CERCLA, 42 U.S.C. § 9606(a), and Section 7003(a) of RCRA 42 U.S.C. § 6973(a), the Respondents are hereby ordered to take the following response actions at the Walsh Landfill Site:

a. Within seventy-two hours of the effective date of this Order, the Respondents shall submit a written plan to the EPA On-Scene Coordinator ("OSC") describing the response actions to be implemented. Specifically, the actions to be addressed in that plan shall include:

1. Characterization, staging and sampling of the twenty-six (26) drums at the Walsh Landfill Site.

2. Sampling of visually contaminated soils in the drum storage and drum staging areas.

3. Sampling of the seep referred to in Paragraph 11 and described in Attachement 1 and soils immediately adjacent to the seep.

4. Sampling of at least the eight residential wells referred to in Paragraph 22 and described in Attachment 1. Additional residential well samples may be required by direction of the OSC.

5. Laboratory analysis of samples collected pursuant to Paragraph

42(a)(1), (2), and (3) (i.e., drums, soil and seep samples) must be sufficient to characterize the extent and degree of contamination. In addition, analysis shall be sufficient to fully characterize wastes for the purpose of disposal. At a minimum this shall include analysis for EPA's RCRA characteristics and analysis for EPA's designated priority pollutants, as described in Attachment 2. Priority pollutant analysis is to consist of at least one representative composite sample per location.

6. Laboratory analysis of samples collected pursuant to Paragraph 42(a)(4) (i.e., residential well samples) shall include priority pollutant analysis.

7. A written sampling protocol describing the sample containers, sampling procedures, sample volumes, sample preservation, sample chain of custody, sample analysis procedures, sample detection limits, and laboratory quality assurance and quality control procedures.

8. The name, address and phone numbers of the laboratory which will conduct sample analysis.

9. Submission of the sample results to the OSC within 24 hours of the receipt of the results by the Respondents.

10. Removal, transportation and treatment, storage or disposal of the twenty-six (26) drums and their contents in a manner consistent with applicable federal, state and local laws and regulations. The plan shall identify the means by which such substances shall be removed, transported and treated, stored or disposed of, the name(s), address(es) and telephone number(s) of any persons who will assist in or conduct such activities and the facilities at which such substances will be treated, stored or disposed

of. The activities, persons and facilities identified pursuant to this subparagraph are subject to the approval of the OSC.

11. Implementation of security measures including posting of warning signs in the vicinity of the drums during response activities.

12. A written safety plan describing occupational safety measures to be implemented at the site during response activities.

13. Consultation with the OSC, after receipt of the sample analysis described in Paragraph 42(a)(3) and (4) to determine the need for and, if necessary, to develop additional response actions to be taken at the Walsh Landfill Site.

b. Respondents shall begin to implement the plan described in Paragraph 42(a) above within 48 hours of the OSC's approval of the plan as submitted or as modified by the OSC.

c. Respondents shall furnish the OSC, upon request and/or as appropriate, all information generated by and/or relating to the response actions approved under the plan outlined in Paragraph 42(a) above, including, but not limited to, sample results, identities of contractor(s) used to perform response actions, copies of manifests, and unforeseen conditions which might become known as response actions progress.

d. Within 24 hours of the completion of the response actions described herein and in Respondents' plan, Respondents shall notify the OSC of such completion and shall furnish the OSC with documentation establishing that all response actions were performed in accordance with the requirements of this Order.

e. Respondents shall grant the OSC, his designee, any Pennsylvania Department of Environmental Resources ("PADER") employee, and any EPA

employee, contractor, agent or authorized representative access to the site at all reasonable times to monitor response activities at the site, to take samples, to inspect the site, and to take other actions, which, in the opinion of the OSC are necessary to ensure compliance with this Order or to protect the public health, welfare or the environment, as authorized by Section 106(a) of CERCLA, 42 U.S.C. § 9606(a), and Section 300.65 of the the NCP, 40 C.F.R. § 300.65.

f. In the event that Respondents fail or refuse to comply with the requirements of this Order, Respondents shall grant the OSC, his designee, and any EPA or PADER employee, contractor, agent or other authorized representative access to the Walsh Landfill Site, at all reasonable times, to undertake such measures in lieu of the Respondents and to take any other measures which the OSC determines may be necessary to protect public health, welfare or the environment.

g. Respondents shall continue to be subject to the requirements of this Order until such time as the OSC has determined that all releases or threatened releases of hazardous substances from, or the storage and the disposal of hazardous wastes at, the Walsh Landfill Site which may present an imminent and substantial endangerment to the public health, welfare or environment have been abated, or until this Order is revoked or superseded by a subsequent Order.

h. Nothwithstanding any other provisions set forth herein, EPA reserves the right to take appropriate enforcement action, including the right to seek monetary penalties, for any violation of law or this Order, including, but not limited to, the issuance of additional Orders under Section 106(a) of

CERCLA, 42 U.S.C. § 9606(a), and Section 7003(a) of RCRA, 42 U.S.C. § 6973(a), and/or the bringing of a civil action under Section 106(a) of CERCLA, 42 U.S.C. § 9606(a), or Section 107 of CERCLA, 42 U.S.C. § 9607 or Section 7603(b) of RCRA, 42 U.S.C. § 6973(b).

EFFECTIVE DATE - OPPORTUNITY TO CONFER

43. This Order will become effective 48 hours after receipt by Respondents.

44. Respondents shall notify the OSC within 72 hours of the effective date of this Order whether they are willing, ready, and able to comply with the terms of this Order.

45. Respondents may, within 72 hours of the effective date of this Order, orally contact EPA to request a conference to discuss the terms of this Order. Respondents shall submit written confirmation of any such request within 24 hours of such request. A request for a conference shall not automatically stay the effective date or any requirement of this Order.

46. At any conference held pursuant to Respondents' request, Respondents may appear in person or by attorney or other representative for the purpose of presenting any objection, defense or contentions which Respondents may have regarding this Order. If Respondents desire such a conference, Respondents should contact Michael Zickler, OSC, at (215) 597-9898 (24 hour hotline) within the time limits set forth above for requesting a conference.

PENALTIES FOR NONCOMPLIANCE

47. Respondents are advised that willful violation or failure or refusal to comply with this Order, or any portion hereof, may subject Respondents to a civil penalty of not more than $5,000.00 for each day in which such

violation occurs or such failure to comply continues, in accordance with Section 106(b) of CERCLA, 42 U.S.C. § 9606(b), and Section 7003(b) of RCRA, 42 U.S.C. 6973(b). Failure to comply with this Order, or any portion hereof, without sufficient cause, may also subject Respondents to liability for punitive damages up to three times the amount of response costs incurred by the Hazardous Substance Response Fund (as defined in Section 101(11) of CERCLA, 42 U.S.C. § 9601(11), as a result of such failure to take proper action, in accordance with Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3).

DATED: FEB 22 1985

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

by: _____
STANLEY L. LASKOWSKI,
Acting Regional Administrator
US Environmental Protection Agency, Region III

We acknowledge that we have received and read this Order and hereby inform EPA of our intention to fully comply with the terms and requirements of this Order.

_____ _____
DATE ERNEST BARKMAN

_____ _____
DATE GRACE BARKMAN

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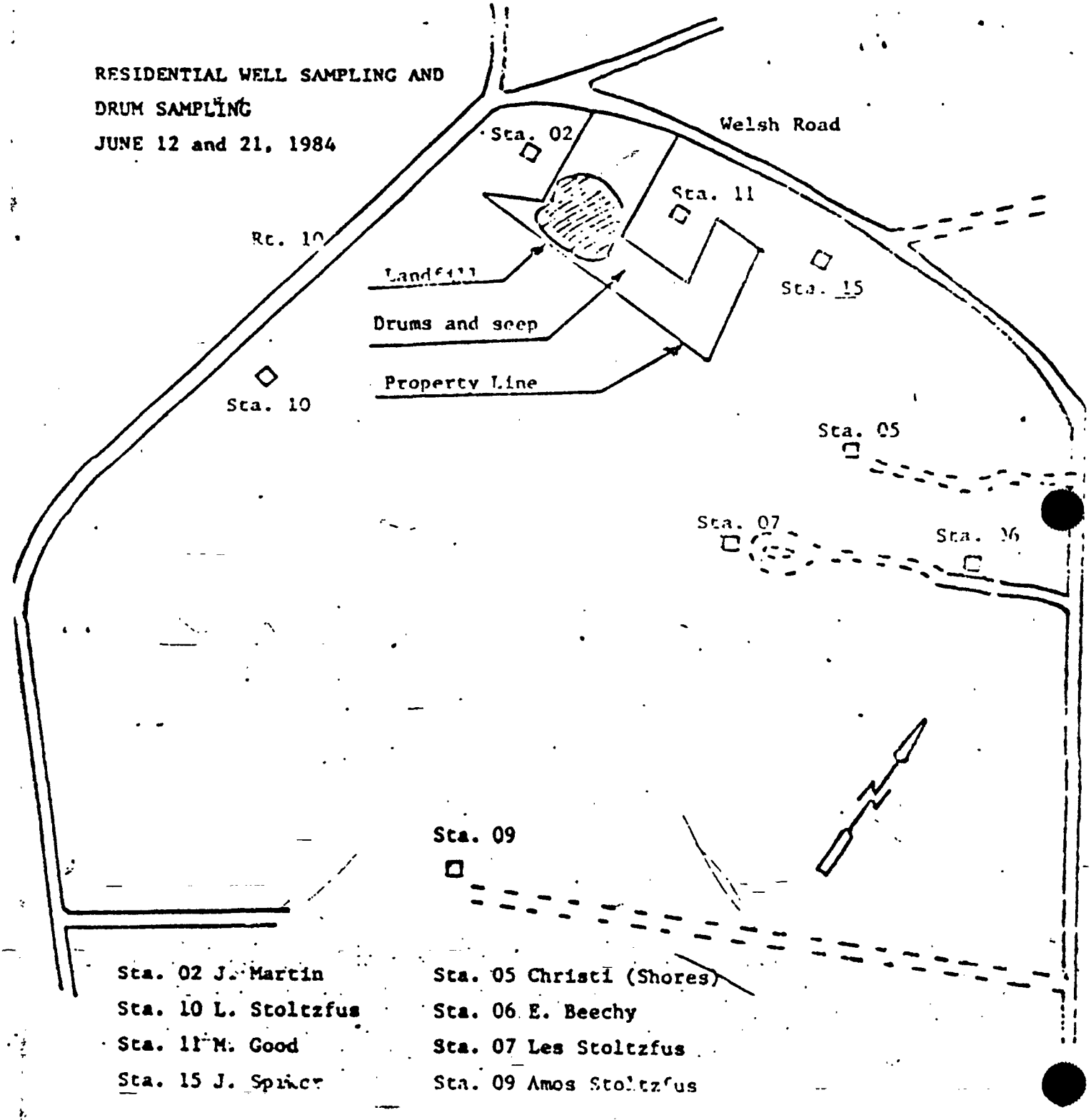
ATTACHMENT 1

RESIDENTIAL WELL AND SEEP SAMPLE LOCATIONS



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ATTACHMENT 2

PRIORITY POLLUTANTS

1. *acenaphthene
2. *acrolein
3. *acrylonitrile
4. *benzene
5. *benzidine
6. *Carbon tetrachloride (tetrachloromethane)
   *chlorinated benzenes (other than dichlorobenzenes)
7. chlorobenzene
8. 1,2,4-trichlorobenzene
9. hexachlorobenzene
   *chlorinated ethanes (including 1,2-dichloroethane, 1,1,1-trichloroethane and hexachloroethane)
10. 1,2-dichloroethane
11. 1,1,1-trichloroethane
12. hexachloroethane
13. 1,1-dichloroethane
14. 1,1,2-trichloroethane
15. 1,1,2,2-tetrachloroethane
16. chloroethane
    *chloroalkyl ethers (chloromethyl, chloroethyl and mixed ethers)
17. bis (chloromethyl) ether
18. bis (2-chloroethyl) ether
19. 2-chloroethyl vinyl ether (mixed)
    *chlorinated naphthalenes
20. 2-chloronaphthalene
    *chlorinated phenols (other than those listed elsewhere, includes trichlorophenols and chlorinated cresols)
21. 2,4,6-trichlorophenol
22. parachlorometa cresol
23. *chloroform (trichloromethane)
24. *2-chlorophenol
    *dichlorobenzenes
25. 1,2-dichlorobenzene
26. 1,3-dichlorobenzene
27. 1,4-dichlorobenzene
28. 3,3-dichlorobenzidine
    *dichloroethylenes (1,1-dichloroethylene and 1,2-dichloroethylene)
29. 1,1-dichloroethylene
30. 1,2-trans-dichloroethylene
31. *2,4-dichlorophenol
    *dichloropropane and dichloropropene
32. 1,2-dichloropropane
33. 1,2-dichloropropylene (1,3-dichloropropene)
34. *2,4-dimethylphenol
    *dinitrotoluenes
35. 2,4-dinitrotoluene
36. 2,6-dinitrotoluene
37. *1,2-diphenylhydrazine
38. *ethylbenzene
39. *fluoranthene
    *Haloethers (other than those listed elsewhere)
40. 4-chlorophenyl phenyl ether
41. 4-bromophenyl phenyl ether
42. bis (2-chloroisopropyl) ether
43. bis (2-chloroethoxy) methane
    *halomethanes (other than those listed elsewhere)
44. methylene chloride (dichloromethane)
45. methyl chloride (chloromethane)
46. methyl bromide (bromomethane)
47. bromoform (tribromomethane)
48. dichlorobromomethane
49. trichlorofluoromethane
50. dichlorodifluoromethane
51. chlorodibromomethane
52. *hexachlorobutadiene
53. *hexachlorocyclopentadiene
54. *isophorone
55. *naphthalene
56. *nitrobenzene
    *nitrophenols (including 2,4-dinitrophenol and dinitrocresol)
57. 2-nitrophenol
58. 4-nitrophenol
59. *2,4-dinitrophenol
60. 4,6-dinitro-o-cresol
    *nitrosamines
61. N-nitrosodimethylamine
62. N-nitrosodiphenylamine
63. N-nitrosodi-n-propylamine
64. *pentachlorophenol
65. *phenol
    *phthalate esters
66. bis (2-ethylhexyl) phthalate
67. butyl benzyl phthalate
68. di-n-butyl phthalate
69. di-n-octyl phthalate
70. diethyl phthalate
71. dimethyl phthalate
    *polynuclear aromatic hydrocarbons
72. benzo (a) anthracene (1,2-benzanthracene)
73. benzo (a) pyrene (3,4-benzopyrene)
74. 3,4-benzofluoranthene
75. benzo (k) fluoranthene (11,12-benzofluoranthene)
76. chrysene
77. acenaphthylene
78. anthracene
79. benzo (ghi) perylene (1,2-benzoperylene)
80. phenanthrene
81. fluorene
82. dibenzo (a,h) anthracene (1,2,5,6-dibenzanthracene)
83. indeno (1,2,3-cd) pyrene (2,3-o-phenylenepyrene)
84. pyrene
85. *tetrachloroethylene
86. *toluene
87. *trichloroethylene
88. *vinyl chloride (chloroethylene)
    pesticides and metabolites
89. *aldrin
90. *dieldrin
91. *chlordane (technical mixture & metabolites)
    DDT and metabolites
92. 4,4'-DDT
93. 4,4'-DDE (p,p'-DDX)
94. 4,4'-DDD (p,p'-TDE)
    *endosulfan and metabolites
95. a-endosulfan-Alpha
96. b-endosulfan-Beta
97. endosulfan sulfate
    *endrin and metabolites
98. endrin
99. endrin aldehyde
    *heptachlor and metabolites
100. heptachlor
101. heptachlor epoxide
    *hexachlorocyclohexane (all isomers)
102. a-HHC-Alpha
103. b-HHC-Beta
104. g-HHC (Lindane)-Gamma
105. g-HHC-Delta
    *polychlorinated biphenyls (PCB's)
106. PCB-1242 (Arochlor 1242)
107. PCB-1254 (Arochlor 1254)
108. PCB-1221 (Arochlor 1221)
109. PCB-1232 (Arochlor 1232)
110. PCB-1248 (Arochlor 1248)
111. PCB-1260 (Arochlor 1260)
112. PCB-1016 (Arochlor 1016)
113. *Toxaphene
114. *Antimony (Total)
115. *Arsenic (Total)
116. *Asbestos (Fibrous)
117. *Beryllium (Total)
118. *Cadmium (Total)
119. *Chromium (Total)
120. *Copper (Total)
121. *Cyanide (Total)
122. *Lead (Total)
123. *Mercury (Total)
124. *Nickel (Total)
125. *Selenium (Total)
126. *Silver (Total)
127. *Thallium (Total)
128. *Zinc (Total)
129. *2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)

200017

Subpart C—Characteristics of Hazardous Waste

§ 261.20 General.

(a) A solid waste, as defined in § 261.2, which is not excluded from regulation as a hazardous waste under § 261.4(b), is a hazardous waste if it exhibits any of the characteristics identified in this Subpart.

[*Comment:* § 262.11 of this chapter sets forth the generator's responsibility to determine whether his waste exhibits one or more of the characteristics identified in this Subpart.]

(b) A hazardous waste which is identified by a characteristic in this subpart, but is not listed as a hazardous waste in Subpart D, is assigned the EPA Hazardous Waste Number set forth in the respective characteristic in this Subpart. This number must be used in complying with the notification requirements of Section 3010 of the Act and certain recordkeeping and reporting requirements under Parts 262 through 265 and Part 270 of this chapter.

(c) For purposes of this Subpart, the Administrator will consider a sample obtained using any of the applicable sampling methods specified in Appendix I to be a representative sample within the meaning of Part 260 of this chapter.

[*Comment:* Since the Appendix I sampling methods are not being formally adopted by the Administrator, a person who desires to employ an alternative sampling method is not required to demonstrate the equivalency of his method under the procedures set forth in §§ 260.20 and 260.21.]

[45 FR 33119, May 19, 1980, as amended at 48 FR 14294, Apr. 1, 1983]

§ 261.21 Characteristic of ignitability.

(a) A solid waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

(1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60°C (140°F), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80 (incorporated by reference, see § 260.11), or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78 (incorporated by reference, see § 260.11), or as determined by an equivalent test method approved by the Administrator under procedures set forth in §§ 260.20 and 260.21.

(2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that is creates a hazard.

(3) It is an ignitable compressed gas as defined in 49 CFR 173.300 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under §§ 260.20 and 260.21.

(4) It is an oxidizer as defined in 49 CFR 173.151.

(b) A solid waste that exhibits the characteristic of ignitability, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D001.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

§ 261.22 Characteristic of corrosivity.

(a) A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using either an EPA test method or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21. The EPA test method for pH is specified as Method 5.2 in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11).

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55°C (130°F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (incorporated by reference, see § 260.11) or an equivalent test method approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21.

(b) A solid waste that exhibits the characteristic of corrosivity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D002.

[45 FR 33119, May 19, 1980, as amended at 46 FR 35247, July 7, 1981]

§ 261.23 Characteristic of reactivity.

(a) A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

ORIGINAL (Red)

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It forms potentially explosive mixtures with water.

(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(8) It is a forbidden explosive as defined in 49 CFR 173.51, or a Class A explosive as defined in 49 CFR 173.53 or a Class B explosive as defined in 49 CFR 173.88.

(b) A solid waste that exhibits the characteristic of reactivity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number of D003.

§ 261.24 Characteristic of EP toxicity.

(a) A solid waste exhibits the characteristic of EP toxicity if, using the test methods described in Appendix II or equivalent methods approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21, the extract from a representative sample of the waste contains any of the contaminants listed in Table I at a concentration equal to or greater than the respective value given in that Table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering, is considered to be the extract for the purposes of this section.

(b) A solid waste that exhibits the characteristic of EP toxicity, but is not listed as a hazardous waste in Subpart D, has the EPA Hazardous Waste Number specified in Table I which corresponds to the toxic contaminant causing it to be hazardous.

TABLE I—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR CHARACTERISTIC OF EP TOXICITY

EPA hazardous waste number	Contaminant	Maximum concentration (milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy 1,4,4a,5,6,7,8,8a-octahydro-1,4-endo, endo-5,8-dimethano-naphthalene	0.02
D013	Lindane (1,2,3,4,5,6-hexa- chlorocyclohexane, gamma isomer.	0.4
D014	Methoxychlor (1,1,1-Trichloro-2,2-bis (p-methoxyphenyl) ethane).	10.0
D015	Toxaphene ($C_{10}H_{10}Cl_8$, Technical chlorinated camphene, 67-69 percent chlorine).	0.5
D016	2,4-D, (2,4-Dichlorophenoxyacetic acid).	10.0
D017	2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid).	1.0

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